

WHAT IS CLAIMED IS:

1. A transaction card, comprising:
 - a) a card body defining a recess and a viewing window in the recess, the card body having long term information printed thereon;
 - b) a display tag including a character display for displaying short term information, the character display having optical states that are stable without power and viewable from one side of the tag and an array of contacts for addressing the character display from the other side of the tag, the display tag being located in the recess with the character display being viewable through the viewing window;
 - c) a cap defining a contact window, the cap being mounted in the recess over the display tag with the contacts being accessible through the contact window, an exposed surface of the cap being coplanar with a back surface of the card body; and
 - d) means for providing machine readable data.
2. The transaction card claimed in claim 1, wherein the means for providing machine readable data is a magnetic stripe on the card body, an embedded memory chip with exposed contacts on the card body, an RFID chip embedded in the card body, or a bar code printed on the card body.
3. The transaction card claimed in claim 1, wherein the display tag comprises a bistable cholesteric liquid crystal display.
4. The transaction card claimed in claim 2, wherein the display tag comprises:
 - a) a substrate;
 - b) a common electrode layer located on the substrate and defining a common electrode for each character in the display, the common electrodes including a contact portion that extends to an edge of the display;

c) a bistable liquid crystal layer located over the common electrode layer, the bistable liquid crystal layer extending up to, but not over the contact portions of the common electrode layer;

d) a plurality of conductive character elements located on the bistable liquid crystal layer over each of the common electrodes;

e) a dielectric layer located over the conductive character elements, the dielectric layer defining vias to the character elements; and

f) a corresponding plurality of conductive traces on the dielectric layer and in electrical contact with respective conductive character elements through the respective vias and extending from the respective vias to the edge of the display tag.

5. A transaction card system, comprising:

a) a transaction card having

i) a card body defining a recess and a viewing window in the recess, the card body having long term information printed thereon;

ii) a display tag including a character display for displaying short term information, the display tag having optical states that are stable without power and viewable from one side of the tag and an array of electrical contacts for electrically addressing the character display from the other side of the tag, the display tag being located in the recess with the character display being viewable through the viewing window;

iii) a cap defining a contact window, the cap being mounted in the recess over the display tag with the contacts being accessible through the contact window, an exposed surface of the cap being coplanar with a back surface of the card body; and

iv) means for providing machine readable data;

b) a transaction card writer having,

i) a reader for the machine readable data;

ii) an array of electrical contact pins arranged for making contact with the display tag through the contact window in the cap; and

iii) control electronics including means for receiving display commands and producing drive signals to the electrical contacts and means for communicating the machine readable data; and

c) a central computer connected to the transaction card writer and having a data base and a central processor for receiving the data read by the magnetic card reader and generating display commands for the transaction card writer.

6. The system claimed in claim 5, wherein the means for providing machine readable data is a magnetic stripe on the card body, an embedded memory chip with exposed contacts on the card body, an RFID chip embedded in the card body, or a bar code printed on the card body.

7. The system claimed in claim 5, wherein the machine readable data is a unique identifier; the data base contains information relating to privileges due to the holder of the card; and the central computer retrieves currently available privilege information based on the unique identifier, updates the information in the data base based on any current transaction and outputs a display command corresponding to the currently available privilege.

8. The system claimed in claim 5, further comprising a terminal connected to the central computer for indicating the receipt of value, the terminal including a transaction card writer for updating the short term information displayed on the transaction card based on the value received; and the computer including means for updating the privilege information based on the amount of value received.

9. The system claimed in claim 8, wherein the terminal is an automated terminal including a credit card reader and/or a cash receiver.

10. The system claimed in claim 8, wherein the value is received in the form of cash.

11. The system claimed in claim 8, wherein the value is received in the form of an electronic credit or debit transaction.

12. The system claimed in claim 5, further comprising a printer connected to the central computer for printing the long term information on the transaction card.

13. The system card writer claimed in claim 12, further comprising a writer connected to the central computer for writing machine readable data on the card.

14. A transaction card writer for writing short term information onto a transaction card having a display tag including a character display for displaying the short term information, the character display having optical states that are stable without power and viewable from one side of the display tag and an array of electrical contacts for electrically addressing the character display from the other side of the tag, a contact window through which the contacts are accessible, and means on the card for providing machine readable data, comprising:

- a) a reader for reading machine readable data stored on transaction card;
- b) an array of electrical contact pins arranged for making contact with the display tag on the transaction card through the contact window in the card;
- c) means for moving the electrical contacts between a position out of contact with the display tag to a position into contact with the display tag in response to insertion and removal of the transaction card into a slot in the transaction card writer, thereby minimizing wear on the array of electrical contacts on the transaction card; and

d) control electronics including means for receiving display commands and producing drive signals to the electrical contacts and means for communicating the data read by the transaction card writer.

15. The transaction card writer claimed in claim 14, wherein the means for providing machine readable data is a magnetic stripe on the card body, an embedded memory chip with exposed contacts on the card body, an RFID chip embedded in the card body, or a bar code printed on the card body.

16. The transaction card writer claimed in claim 14, further comprising a writer for writing machine readable data onto the card.

17. A method of conducting a transaction, comprising:

a) providing a transaction card system having,

i) a transaction card with a display tag for displaying short term information, the character display having optical states that are stable without power and viewable from one side of the display tag and an array of electrical contacts for electrically addressing the character display from the other side of the tag, a contact window through which the contacts are accessible, means for providing machine readable data on the card, and long term information printed on the transaction card;

ii) a transaction card writer having a reader for reading the machine readable data and means for updating the short term information displayed on the transaction card; and

iii) a central computer connected to the transaction card writer having a data base and a central processor for receiving the data read by the reader and generating display commands for the transaction card writer; and

b) conducting a transaction using the transaction card system, by reading the machine readable data on the transaction card in the transaction card writer to retrieve information relating to a transaction privilege and updating the

short term information on the transaction card based on specifics of the transaction and the transaction privilege.

18. The method claimed in claim 17, wherein the means for providing machine readable data is a magnetic stripe on the card body, an embedded memory chip with exposed contacts on the card body, an RFID chip embedded in the card body, or a bar code printed on the card body.

19. The method claimed in claim 17, wherein the short term information displayed by the transaction card is a monetary value.

20. The method claimed in claim 17, further comprising the steps of:

c) providing a terminal connected to the central computer for indicating a receipt of value;

d) receiving value at the terminal from a holder of a transaction card;

and

e) updating the privilege information and updating the short term information displayed on the transaction card based on the value received.